

## Description

# SAFETY PANEL FOR HANDGUNS

### BACKGROUND OF INVENTION

[0001] This invention relates to handguns that store ammunition within the frame of the grip and that have one or more openings in that frame. In particular, it relates to a safety panel that is inserted in between the grip cover and the frame to protect the user of the handgun should ammunition within the grip explode.

[0002] In automatic and semi-automatic handguns, ammunition is stored in the grip of the gun. As bullets are fired, a spring mechanism forces bullets up into the barrel of the gun. In some designs for these guns, the frame of the gun, which holds the bullets within the grip, has one or more openings in each side. For example, the 1911 design for a 45 caliber semi-automatic by John Browning (see Figures 3 and 4), which was produced and sold by Colt Manufacturing and other companies, has a large aperture in each side of the frame. The purpose of these apertures is to reduce the weight of the gun and reduce

manufacturing costs.

[0003] Normally, an aperture in the frame of a gun that stores ammunition in the grip does not present any problems. However, if a defective bullet is fired; those apertures can result in injury to the shooter. For example, in a squib load, a round is loaded with only the primer in it. When the round is fired, the ignition of the primer may cause the bullet to leave its casing but remain in the barrel and block the next shot, which causes a "blowout" back towards the shooter. A blowout may also occur if a round is loaded with a double charge of gun powder, or if the round has been reloaded several times, weakening the casing, or if the round is improperly loaded in the gun. If a blowout occurs, it may, in turn, ignite a bullet stored in the chamber in the grip and, when that bullet ignites, it may ignite other bullets in the chamber, causing the grip of the gun to explode. If there is an aperture in the frame of the grip, hot gases and shrapnel under great pressure will pass through the aperture. If the grip panel that covers the aperture is made of plastic, wood, or a thin or weak metal, then bits of plastic, wood, and/or metal will be impelled at high velocities into the hand and possibly the face of the shooter.

[0004] U.S. Patent No. 4,999,941 shows an example of a gun where the bullets are stored within the grip. A stiffening plate 34, which may be stainless steel, is provided in the grip, but there are numerous apertures in the stiffening plate through which hot gasses and shrapnel could pass in a blowout.

## **SUMMARY OF INVENTION**

[0005] We have found a way to protect gun users from the ignition of ammunition stored in the grip of guns that have apertures in their frames. In this invention, a safety panel that covers the apertures is inserted between the grip covers and the frame. Should a blowout occur, the safety panel retains its shape and distributes the pressure more evenly to absorb the shock and prevent shrapnel and grip fragments from being impelled into the hand or face of the user. The high pressure gases from the explosion escape (leak out) through small openings in the gun and do not harm the user.

[0006] The safety panels of this invention are thin and do not detract from the appearance or utility of the gun. The safety panels may be identical so that a single safety panel can be used on either side of the gun. The panels may also have indentations in their peripheries so that they can be

used on a variety of different types of grips.

## **BRIEF DESCRIPTION OF DRAWINGS**

- [0007] Figure 1 is a side view of a certain presently preferred embodiment of a safety panel according to this invention.
- [0008] Figure 2 is a right side view, partially cut-away, of a semi-automatic handgun showing the position of an installed safety panel according to this invention.
- [0009] Figure 3 is an isometric exploded view of a disassembled handgun, showing how safety panels according to this invention are attached to a handgun.
- [0010] Figure 4 is a side view, in section, of a handgun, illustrating a blowout within the grip.

## **DETAILED DESCRIPTION**

- [0011] Figure 1 shows a safety panel 1 that may be used on either the left or right side of most automatic and semi-automatic handguns. Safety panel 1 comprises a flat plate 2 that will absorb the shock of exploding ammunition without shattering or permitting shrapnel to pierce it. Stainless steel is the preferred material due to its toughness, durability, resistance to corrosion, and relatively low cost. However, other materials may also be used that can provide protection, such as other metals (e.g., steel,

brass), composite materials (fiberglass, graphite fiber composites), and materials used for bullet-proof vests (e.g., synthetic plastics). The thickness of panel 1 will depend upon the properties of the material from which it is made. A stainless steel panel may be about 0.010 to about 0.030 inches thick.

- [0012] Safety panel 1 is provided with two apertures 3 and 4 through which screws pass to hold it to the frame of the gun. Most guns require two screws in the grip, but a gun may require only a single screw or more than two screws, in which case panel 1 may have an aperture for each screw. However, there are no apertures through safety panel 1 in the area that will cover an aperture in the frame of a gun.
- [0013] Safety panel 1 also has three indented portions, 5, 6, and 7 which enable it to be used on a variety of different types of guns. Indented portion 5 is for a mainspring housing pin clearance, indented portion 6 is for an ambidextrous thumb safety, and indented portion 7 is for a magazine release clearance, which is normally on the right side of the gun. These indentations enable safety panel 1 to be attached to either side of handguns that require clearance for the mainspring housing pin, that have an ambidex-

trous thumb safety, or that require clearance for a magazine release. Preferably, the safety panel 1 that is attached to the right side of the grip of a gun is identical to the safety panel 1 that is attached to the left side of the gun.

- [0014] In Figure 2, handgun 8 has a safety panel 1, as shown in Figure 1, attached to grip 9. Mainspring housing pin 10 fits into indented portion 5, ambidextrous thumb safety 11 fits into indented portion 6, and magazine release 12 fits into indented portion 7.
- [0015] Figure 3 shows a stripped-down semi-automatic handgun and illustrates how the safety panels of this invention are attached to the frame. In Figure 3, handgun frame 13 has a grip portion 14 in which are stored rounds (not shown). Grip portion 14 has a large aperture 15 in each side. There are two threaded screw holes 16 in each side of frame 13 so that decorative grip covers 17 can be attached to it by means of screws 18. In between frame 13 and decorative grip cover 17 are two safety panels 1, as illustrated in Figure 1.
- [0016] In Figure 4, semi-automatic handgun 19 has a grip 20 in which are stored rounds that are forced into barrel 21 by spring 22 as they are fired. The arrows in the drawing illustrate how a blowout occurs when round 23 discharges

back into the chamber 24 holding other rounds 25, igniting them and causing an explosion to occur within grip 20, permitting hot gases and shrapnel to pass through openings 26 in grip 20.

[0017] EXAMPLE

[0018] A safety panel according to this invention was installed between the grip cover and the frame of a 1911 style, 45 caliber semi-automatic handgun. The safety panel was a 0.010 inch thick stainless steel plate as shown in Figure 1. By accident, a blowout occurred when the gun was fired. The shooter was not injured.

[0019] In contrast, another shooter fired a 1911 style, 45 caliber semi-automatic handgun that did not have a safety panel according to this invention installed. By accident, a blowout occurred due to a double charge of powder in a round. The shooter received cuts to his face and hands. Metal and wood fragments were found embedded below the skin of his hands and face.